Clinical Section

*Cancer of the Lip and Mouth

By

A. W. S. HAY, M.D. (Man.), F.R.C.S. (Edin.)

Demonstrator in Surgery, University of Manitoba
Assistant Surgeon, Winnipeg General Hospital

It is more emphatically true of cancer than of any other disease that "there is a tide in the course of disease which taken at the flood leads on to success and cure; omitted all the voyage of the patient's life is bound in shallows and in misery." That the tide has all too frequently passed the flood due to ignorance or procrastination on the part of the patient is a regrettable fact which we hope may be altered by education of the public. In this discussion, we shall limit ourselves to phases of the disease, over which as a profession we should have control.

Our efficiency in the control of malignant disease depends in no small measure on the degree to which we have developed a cancer consciousness; that is, the habit of scrutinizing middle-aged or elderly patients for malignant disease in the most unexpected places, even if the clinical history does not necessarily suggest it. One of the earliest cases of rectal cancer I have seen was a man who came complaining of sore throat and dysphagia. He had no symptoms referrable to the rectum; the tumour was discovered on routine physical examination. Then too, certain conditions may, and frequently do, exist which if left untreated will become malignant. They seem trivial and are often not complained of by the patient. The physician who recognizes this potential danger and points it out to the patient renders him an invaluable service.

In the lips superficial cracks or fissures are often the precursors of malignant disease. Sufferers from these simple ailments would do well to resort to the frequent use of some bland ointment or oil. Where such cracks fail to heal, a plastic operation, with excision of the diseased mucosa and mobilization of the mucosa from the buccal surface of the lip can be done, leaving a normal appearing lip, which is immune to carcinoma.

Leukoplakia anywhere in the oral cavity is a danger sign and should be carefully managed; treatment is not complete unless it includes repeated and prolonged observation. All sources of intra-oral irritation should be eradicated; septic teeth removed, gums treated, plates or bridges adjusted. Tobacco and alcohol should be interdicted. Daily small doses of magnesium sulphate taken internally or as a mouth wash sometimes result in the absorption of thick epithelial patches. In intractable cases destruction by the actual cautery or diathermy coagulation sometimes clears up the condition. Often no method of treatment is entirely successful and the patient must be kept under observation to have any cracking or ulcerating patches removed as they develop. Fourteen to twenty per cent. of cases of oral cancer have previous leukoplakia; the longer a given group of patients with leukoplakia are kept under observation the higher the percentage of them that will develop cancer.

Syphilis is a frequent precursor of malignant disease in the mouth, 16 to 65 per cent. being reported figures for the presence of this disease preceding cancer. A given ulcerated lesion anywhere in the oral cavity in the presence of a positive Wassermann should be regarded as malignant until careful microscopic study proves it otherwise. There is no justification for delaying while the patient is given a trial of antiluetic treatment. The inflammatory zone around a neoplasm may subside on such treatment and give a false sense of security. Malignant tumours in a syphilitic patient always do badly, hence the urgent necessity of attacking them at the earliest possible moment.

Fifty to eighty per cent. of the patients with intra-oral cancer have one or more dental defects including cavities, sharp edges, misplaced teeth, sharp bridge clasps, or badly fitting plates. Long-continued trauma of the buccal or lingual mucosa by any of these agencies results in a chronic inflammatory zone, or a chronic ulcer which may gradually develop into a malignant neoplasm.

Benign neoplasms such as epulis, lymphangioma, haemangioma, fibroma, and mucous or dermoid cysts have practically no significance as precancerous lesions. Epithelial papillomas have, however, a definite significance. They should be removed reasonably widely, and the base carefully studied for malignant change. If the pathologist is at all suspicious of the base, a wider excision must be done. Even when the tumour is reported benign the patient must be watched over a prolonged period; we have several times seen an epithelioma develop in the site from which a supposed benign papilloma had been removed. It is perhaps unnecessary to emphasize here that every tumour of the mouth, even if clinically benign, should be studied microscopically by a competent pathologist.

Still another purpose is served by microscopic study, viz. grading. The grade of a given malignant tumour is an important guide both as to treatment and prognosis. Time does not permit detailed discussion of the criteria by which the grade of a tumour is decided; that is a problem for the pathologist. Speaking generally, grade 3 or 4 lesions, which are usually radiosensitive and rapidly metastasizing, should be dealt with by radiation. The prognosis in such cases is bad, unless they are treated quite early. Grade 1 and 2 lesions in most situations are suitable for some form of

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surgical treatment. The prognosis in these cases is definitely better than in the higher grades.

Cancer of the Lip

Epithelioma of the lip may vary greatly in its clinical appearance from a chronic fissure or small ulcer with little adjacent induration to a large ulcerated and hard tumour. Occasionally a papillomatous lesion with an infiltrated base is seen. The fungating lesions are generally, but not always, of lower malignancy than ulcerating or infiltrating lesions. Epithelioma occurs about 50 times as frequently in males as in females, and is almost invariably on the lower lip. Glands are often present, either in the submental or submaxillary triangle depending on the site of the tumour. Whether those glands are inflammatory or malignant may be difficult to determine in the early case. Softish tender glands are probably inflammatory. Hard shotty glands are malignant until proven otherwise. The lower jaw is invaded in late cases.

Treatment of epithelioma of the lip depends on the stage and grade of the disease. It, therefore, follows that thorough examination of the local lesions, including x-rays of the lower jaw, if necessary, should be done. A biopsy should generally be taken before treatment is decided upon. Grade 3 and 4 lesions should almost invariably be treated by radiation rather than surgery. I shall not discuss the technique of radiation. When lip cases, or for that matter any tumour cases, are being referred for special treatment, it is usually wise for the referring doctor not to discuss details of treatment with the patient. Several times we have been embarrassed in carrying out treatment on a case unsuitable for radium by the fact that the family physician had urged the patient to insist on radium and not have any surgery done.

Generally speaking, a U-shaped excision is preferable to a V, so as to minimize the danger of coming too close to the infiltrating base of the tumour. Local anaesthesia is preferred, and the operation is much more apt to be adequate if the area to be excised is carefully marked out on the skin with indelible pencil before the local in introduced.

For extensive operations requiring a plastic closure conduction anaesthesia is excellent. The 2nd and 3rd division of the trigeminal nerve are blocked on each side with two per cent. novocain and adrenalin by the well-known standard technique used in treating trigeminal neuralgia. The infra-orbital nerves may also be blocked. It is possible with this type of anaesthesia to do an operation for complete reconstruction of the lower lip requiring two hours work.

For extensive lesions involving half of the lower lip, a single Estlander triangle turned down will often give a good functional and cosmetic result. Turning down bilateral Estlander triangles for lesions involving the entire lip gives a small mouth and a better method, therefore, is to mobilize the cheek from the lower jaw and reconstruct the lower lip as illustrated. Extensive infiltrating lesions involving the whole lower lip make such a plastic procedure inevitable.

Where the tumour is firmly attached to the mandible or is definitely infiltrating it, the involved portion of the bone, must be resected. It is better if there is any doubt about bone involvement to sacrifice a portion of the mandible than to run the risk of recurrence.

The treatment of lymph nodes has much in common with metastases from all other oral tumours; it will be discussed later.

Carcinoma of the Tongue

Fraser of Edinburgh, in a large series of cases, gives the following distribution of tongue carcinomas:

Edge	43%
Tonsillar region	20%
Sub lingual	10%
Edge to alveolus	11%
Dorsum	
Posterior	16%
Tip	

The commonest type of lesion is an infiltrating type. Sooner or later it becomes excavated in its middle, leaving raised edges and a much wider and deeper area of infiltration than appears on first examination. The extent of the tumour is usually much better determined by palpation than by inspection. Such a lesion may be of any grade, but generally the tendency in the tongue is for carcinoma to be of a higher grade than in the lip.

Fungating or polypoid lesions of the tongue are comparatively rare. They infiltrate slowly, are of a lower grade, and metastasize later than the infiltrating variety. They are generally radio-resistant. An extensive flat tumour sometimes with multiple foci or origin, is the type that not infrequently follow leukoplakia. It ulcerates late and metastasizes slowly. This type of tumour is always radio-resistant.

Tumours of the posterior third of the tongue constitute only one to two per cent. of tongue carcinomas. They are of four different varieties. Epidermoid carcinoma, similar to the varieties encountered in the anterior two-thirds constitutes the most frequent tumour of this region. Less common varieties of tumour in this situation are the lympho-epitheliomas, transitional cell carcinomas, and occasionally adenocarcinoma arising from mucous glands. The former two are highly malignant, rapidly metastasizing but very radio sensitive.

Metastases

Early metastases from all tongue tumours are favored by their rich, lymphatic drainage and by the constant muscular activity of the tongue. Deep ulceration and infective complications are known to accelerate the spread of any tumour, and these factors are inevitable early complications in lesions affecting the tongue. Finally, many tumours of this organ belong to a highly

malignant class of tumour, which characteristically spread to lymph nodes at an early period. It is not to be wondered, therefore, that 30 to 66 per cent. of patients with tongue carcinoma have lymph node involvement when first they seek treatment. The extent of the glandular involvement depends on the duration of the disease and also the other factors mentioned, notably, the malignancy of the tumour and the presence of ulceration and infection. The areas involved depend on the anatomical site of the tumour, the anterior two-thirds draining to submental and submaxillary triangles, the posterior to the carotid triangle on both sides of the neck. It should be pointed out that the normal anatomical paths are followed only at the onset; when lymph paths become blocked by tumour cells or by inflammatory reaction, devious routes may be followed and glands may be found to be involved in unexpected situations.

Treatment of Carcinoma of the Tongue

The immediate mortality is 6 to 14 per cent. in the surgical treatment of cancer of the tongue. If this were followed by a high percentage of cures, the seriousness of the disease would justify the risk. However, the five-year cure of cancer of the tongue was 22.8 per cent. in the hands of a master like Kocher, and 23 to 32 per cent. in the hands of Butlin.

The following lesions would generally be accepted as suitable for surgical removal:

1. Small tumours of low grade.
2. Large, low-grade lesions limited to the anterior 2/3 of the tongue or adjacent floor of the mouth.
3. All tumours involving bone, if not too extensive, and if, as will rarely be the case, there are no other contra-indications to surgery.
4. Surgical or diathermy excision is often called for in tumours arising in a syphilitic tongue, because the scarred organ has a vascular bed unsuitable for a satisfactory radiation reaction.
5. Surgical removal as an adjunct to radiation.

The diathermy knife enjoys a wide popularity in the modern surgery of carcinoma of the tongue. The minimum of manipulation is required, therefore the likelihood of disturbing the tumour and causing metastases during the operation is remote. If the minimum effective current be used without sparking not over a millimeter of normal tissue is destroyed in the remaining portion of the tongue. Haemorrhage is easily controlled with the coagulating current if the lingual or external carotid has been tied as a preliminary measure. Ligation of the external carotid is to be preferred to ligation of the lingual if the tumour extends back toward the posterior third, especially if it invades the pillars of the fauces or the tonsil, because these areas are supplied by vessels other than the lingual, notably, the ascending pharyngeal, ascending palatine, and the tonsillar branch of the facial.

In the past 30 years, a quiet revolution has occurred in the management of malignant disease, nowhere better exemplified than in carcinoma of the tongue. The use of diathermy and radiation, either singly or in combination, has almost entirely displaced the former mutilating procedures for removal of tumours of the tongue. The five-year cures are better; the end results to the patient is also better since more of the tongue is spared, in a scarred condition, it is true, but nevertheless useful in phonation and deglutition.

Radiation therapy is indicated in the following types of cases:

1. All high grade tumours (2, 3, and 4).
2. All tumours of the posterior ⅓ or the tongue.
3. As a preliminary or as an adjunct to surgery, where the tumour is large.

Carcinoma of Gums and Palate

Carcinoma of the gums and palate present problems comparable to one another in that, in both instances, the tumour is close to bone from the beginning and may therefore often be actually invading bone. While radiation therapy is possible if bone is not involved, and should be employed in early high-grade lesions, surgical intervention is preferable in low-grade lesions, and obligatory where bone is involved.

Carcinoma of the lower gums is commoner than the upper. In its early stages it may be mistaken for a marked gingivitis or an epulis. An infected ulcer at the edge of a dirty tooth may be the earliest evidence of a neoplasm. Should the tooth be extracted without the disease being recognized, early involvement of the tooth socket with infiltration of the mandible is inevitable. The deep, reddish purple colour of the peridental ulcer, and the cartilaguous hardness of its edge should put one on the track of a neoplasm and suggest a biopsy. Epithelioma of the upper gum margins present a similar clinical picture. There is this pitfall, however, that a tumour fungating through upper gum margins, especially in a patient who has had a lot of recent extractions "for toothache", may be the early manifestation of a carcinoma of the antrum invading the gum of the maxilla through the teeth sockets. Every such case should have a radiograph of the antrum done to make sure that the primary is not in this cavity. Tumours of the palate may be epidermoid, adenocarcinoma, or mixed cell tumours. The latter two are often slowly growing non-ulcerated, hard, nodular tumours. Epithelioma may be fungating or ulcerating. It is a deeper colour than the surrounding mucosa and is cartilaginous in its consistency.

Treatment

In the treatment of carcinoma of upper and lower gum and of the hard palate, there is rarely any necessity for an extensive resection operation.

Where the disease is so extensive as to require removal of the whole upper jaw or half the lower, the disease is almost certainly too advanced to be sured, unless it is a grade one type of lesion.

The most readily applicable method of treatment is to ligate the external carotid artery and then coagulate the whole of the tumour with diathermy or electro-cautery, extract the tooth or teeth in the tumour area, and chisel away the teeth sockets down to healthy bone. Often in these cases of extensive bony involvement, diathermy coagulating current can successfully and satisfactorily be used, progressively coagulating the infiltrated bone until no further progress is made, chiseling away the coagulum and repeating the process until normal bone has been reached. Sequestra gradually separate and come away leaving a healthy, granulating area, in 2 or 3 months time. If an opening has necessarily been made in the hard palate, some sort of dental prosthesis is required to fill in the defect. Defects in the lower jaw are similarly corrected with bridge work if enough teeth remain.

Carcinoma of Cheek

Carcinoma of the cheek begins as an ulcer, fissure or papilloma. Its clinical characteristics are similar to those of tumours in the other situations mentioned. The important distinction, however, and one that cannot be made too strongly, is that carcinoma of the cheek is an extremely lethal disease, quite as serious in its prognosis as carcinoma of the tongue. It may invade the bone of the upper or lower jaw, and it may perforate the cheek.

Diathermy removal, with destruction of involved bone, gives only fair results. Where complete perforation of the cheek is necessary, subsequent repair is accomplished by means of a tubed pedicle flap, lined with skin. One of the great sources of difficulty in dealing with cancer of the cheek is to know how deeply to carry the destruction of the tumour. One naturally seeks to avoid perforation of the cheek. For that reason, even when very mutilating procedures are carried out, recurrences following surgery are frequent. It is our opinion that surface and interstitial radiation are to be preferred to any form of surgery. The five year results from radiation are much better than are obtainable by surgery.

Treatment of Neck Metastases

Metastatic involvement of lymph nodes in oral and lip carcinoma is a very serious complication of the problem. It immediately reduced by 75 per cent. whatever was the original chance of effecting a five-year cure. In cancer of the tongue, for example, 40-50 per cent. of five-year cures can be anticipated in cases where no glands are palpable on admission. Where glands are palpable, not more than 10-15 per cent. of five-year cures are possible. Of the utmost importance in formulating views on the treatment of glands of the neck is the recognition of the fundamental fact that in only one per cent. of intra-oral carcinomas does the disease ultimately extend below the clavicle. The lymph nodes of the neck, therefore, constitute a barrier beyond which 99 per cent. of oral carcinomas never pass.

There is no unanimity of opinion as to the advisability of doing neck dissections or using radiation methods in the treatment of metastatic glands of the neck. Carcinoma of the tongue, by virtue of its tendency to metastasize rapidly, deserves separate consideration. Wookey has shown that in tongue cases having no glands on admission 50 per cent. develop glands later. In contrast with this high percentage of metastases from tongue carcinoma, Duffy records 234 cases of intra-oral cancer from all sources with no glands on admission, in whom only 23 per cent. developed glands subsequent to the control of the primary lesion. It follows, therefore, that in tongue cases the most radical treatment of the glands is indicated at an early date. When the tumour involves the anterior 2/3 of the tongue, and is unilateral, a block dissection should be done on that side as soon as the primary lesion is controlled. This would not, however, apply to grade 3 or 4 lesions, nor would it apply to lesions of the posterior 1/3 of the tongue, since such lesions present a problem which should be dealt with by radiation only.

When the primary tumour is in the lip, gums, palate, cheek, or floor of the mouth, the problem of the glands is one about which considerably differing opinions exist. The results of interstitial implantation of gold seeds are quite as good, if not a little better, than those obtained by radical surgery. The fundamental assumption on which is based the technique of surgical exposure and irradiation of palpable glands, is that lymph nodes up to a point have a conservative function. This has been proven microscopically and by clinical experience. This method of treating lymph nodes has much to recommend it, and will probably come into increasing use.

Where the primary lesion is grade 1 or 2, no glands palpable, and the patient can be kept under observation, it is justifiable to defer dissection until glands appear, because of Duffy's observation that only 23 per cent. of these cases subsequently develop glands.

Where glands are present with grade 1 or 2 primaries, conservative or radical neck dissection should be done.

When the primary tumour is a grade 3 or 4 lesion, the treatment of the glands should be by the interstitial implantation of gold seeds into the glands. It is necessary in the latter type of disease that frequent follow-up examinations be made.

Fixed or extensive glands, or glands on both sides of the neck, should be regarded as inoperable and treated by radiation for palliation only.

Special Articles and Association Notes

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Editor
C. W. MACCHARLES, M.D. (MAN.)
Advisory Editor
ROSS B. MITCHELL, B.A., M.D., C.M. (MAN.), F.R.C.P.(C.)
Business Manager
J. GORDON WHITLEY
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Minutes of Executive Meetings

Minutes of a meeting of the Retiring Executive and the Executive-Elect of the Manitoba Medical Association held in the Medical Arts Club on Friday, November 4th, 1938, at 6.30 p.m.

Present.

Dr. C. W. Burns
Dr. W. W. Musgrove
Dr. W. S. Peters
Dr. E. L. Ross
Dr. C. B. Stewart
Dr. J. R. Martin
Dr. E. S. Moorhead
Dr. W. E. Campbell
Dr. R. E. Dicks
Dr. C. W. MacCharles
Dr. Geo. Clingan
Dr. S. Bardal
Dr. Geo. Brock
Dr. O. C. Trainor
Dr. S. Kobrinsky
Dr. D. J. Fraser
Dr. E. J. Skafel
Dr. W. G. Campbell.

Following dinner, the meeting was called to order by the President and the minutes of the last Executive meeting on September 21st prior to the Annual Meeting, and also the minutes of the Executive meeting held on October 21st, were read by the Secretary.

It was moved by Dr. W. W. Musgrove, seconded by Dr. C. B. Stewart: THAT the minutes as read be accepted. —Carried.

Dr. C. W. Burns, the Retiring President, then addressed the meeting and expressed appreciation to the members for their support during his term of Presidency and congratulated the Association in having a man so familiar with the work of the Association as Dr. Peters to succeed him. Dr. Burns turned the business of the meeting over to the new President, Dr. W. S. Peters, who replied to Dr. Burns' remarks.

Membership of Executive.

The Secretary read a letter from the Registrar of the College of Physicians and Surgeons dated October 26th, advising the names of the three representatives who were appointed from that body to the Executive Committee of the Manitoba Medical Association:

Dr. H. O. McDiarmid
Dr. W. G. Campbell
Dr. W. W. Musgrove.

The Secretary explained that the election of members to the Executive by the District Medical Societies was for a two-year term, and as the Northern District Medical Society representative was appointed in 1936 a new appointment would have to be made this year by this Society.

The Secretary explained further that owing to Dr. Clingan's election to the Presidency in 1936, an extra rural member at large was elected to replace Dr. Clingan. The minutes of the meeting did not specify which member had been elected to replace Dr. Clingan and which to serve for a three-year term. Dr. Bardal then requested that his name be struck off, as he would like Dr. Cunningham to remain on the Executive. This was accepted by the President and Dr. E. K. Cunningham, of Carman, remains on the Executive for the term 1938-39.

The Secretary then explained further that as Dr. Trainor was a member of the Executive by virtue of being the Manitoba Medical representative on the Canadian Medical Association Executive, the Winnipeg Medical Society, from which body he was originally elected to represent them on the Executive, could elect another member if they wished.

It was moved by Dr. Geo. Clingan, seconded by Dr. W. W. Musgrove: THAT the Secretary write to the Winnipeg Medical Society explaining the position. —Carried.

Appointment of Standing Committees.

It was duly moved, seconded and adopted, that the following Standing Committees and their respective Chairmen be appointed for the ensuing year:

Legislative Committee:

Dr. G. S. Fahrni
Chairman
Dr. C. R. Rice
Dr. S. G. Herbert
Dr. W. G. Campbell.

It was moved and seconded: THAT the first three members also be our representatives on the Committee of Twelve. —Carried.

Radio Committee:

Dr. R. W. Richardson, Convener.

Committee on Historical Medicine and Necrology:

Dr. Ross B. Mitchell, Convener.

Committee on Maternal Mortality:

Dr. J. D. McQueen, Chairman
Dr. F. G. McGuinness
Dr. F. W. Jackson.

Editorial Board of Canadian Medical Association "Journal":

Dr. Ross B. Mitchell, Chairman
Dr. E. S. Moorhead
Dr. C. W. MacCharles.

Committee on Sociology (Economics):

Dr. E. S. Moorhead, Chairman.

Editorial Committee:

Dr. C. W. MacCharles, Convener.

Representative to Manitoba Sanatorium Board:

Dr. B. H. Olson.

Auditors:

Dr. F. G. McGuinness.
Dr. H. D. Kitchen.

Workmen's Compensation Referee Board:

It was moved by Dr. W. W. Musgrove, seconded by Dr. S. Kobrinsky: THAT this appointment be deferred until detailed information is available as to how the appointment should be made in rotation. —Carried.

The Secretary pointed out that Divisions of the Canadian Medical Association had been asked to appoint Committees corresponding to those appointed by the Canadian Medical Association. He suggested that although the Manitoba Medical Association was not a Division that it might be worth while to appoint such Committees in order to facilitate co-operation with the Canadian Medical Association. This was agreed to and the appointment of these Committees was proceeded with.

Cancer	Dr. G. S. Fahrni
Archives	Dr. R. B. Mitchell Dr. J. A. Gunn
Constitution and By-Laws	Dr. F. D. McKenty
Ethics and Credentials	Dr. J. D. Adamson Dr. R. B. Mitchell
Medical Education	Dr. A. T. Mathers
Pharmacy	Dr. W. E. Campbell
Public Health	Dr. F. W. Jackson Dr. M. S. Lougheed Dr. E. S. Bolton
Post-Graduate	Dr. C. W. MacCharles.

Business Arising out of the Minutes:

Report of Representative on the Executive Committee of the Canadian Medical Association.

Dr. O. C. Trainor reported in detail on the meeting of the Executive Committee of the Canadian Medical Association held at the Chateau Laurier at Ottawa, October 27th and 28th.

Rural Relief Cases.

The Secretary reviewed the correspondence with regard to this problem, the reports from the various District Societies, and the results of his meetings with members of the various District Societies, and the resolution passed by the Brandon and District Medical Society as well as by the North Western District Medical Society.

After prolonged discussion it was moved by Dr. Geo. Clingan, seconded by Dr. R. E. Dicks: THAT the problem of medical services for patients on relief and indigents in rural areas be referred to the Committee on Sociology for study and report, and

THAT no approach be made to the Union of Municipalities until after this report had been received.
—Carried.

Workmen's Compensation Board—Correspondence from Dr. Strong:

The Secretary reported that it had been considered that this matter was disposed of at a previous executive meeting but that it was brought up again by Dr. Strong at the annual general meeting, and it was then referred to the incoming executive for attention. As some of the members of the Committee appointed to deal with this problem were not present, the Secretary suggested that it should be deferred until the next meeting of the executive.

It was moved by Dr. W. E. Campbell, seconded by Dr. C. B. Stewart: THAT this matter be deferred to the next executive meeting. —Carried.

Dr. J. R. Davidson's Research Work.

The Secretary reported that the request of this Association to the Department of Cancer Control of the Canadian Medical Association for financial assistance for Dr. J. R. Davidson's research work on cancer had been dealt with at a meeting of the Board of Directors of the Department of Cancer Control on October 14th and that the following resolution was passed: "THAT the Manitoba Medical Association be advised that it is outside of the jurisdiction of this Board of Directors to make grants of money for the purpose of research; but that application might be made to the Canadian Society for the Control of Cancer, the Banting Research Foundation and the Associate Committee on Medical Research of the National Research Council."

He also reported that the Secretary of the Associate Committee on Medical Research of the National Research Council in a letter dated October 24th had suggested that investigators requiring financial assistance should give an estimate of the financial needs before any request was sent in.

Dr. Trainor pointed out that Sir Frederick Banting, Chairman of the Committee, was to undertake an investigation of all research projects in Canada for the Associate Committee on Medical Research, and that Dr. P. H. T. Thorlakson was one of the members of this Committee.

It was moved by Dr. W. G. Campbell, seconded by Dr. Geo. Brock: THAT the Secretary be instructed to write to Dr. P. H. T. Thorlakson asking him to bring to the attention of the Associate Committee on Medical Research of the National Research Council, Dr. J. R. Davidson's request for financial assistance in his research work on cancer, and also

THAT application might be made to the Canadian Society for the Control of Cancer and the Banting Research Foundation.

Emergency Treatment of Workmen's Compensation Cases—Minor Injuries.

The Secretary reviewed the correspondence including a letter from Dr. A. J. Fraser dated October 5th, 1938, and the previous minutes in connection with this question. Dr. Fraser in his letter stated that he wished to know what further action the Manitoba Medical Association was to take on the motion passed on November 23rd, 1937, and if it was the intention of the Executive to communicate this motion to all hospitals in the province and secure their approval of this resolution.

It was moved by Dr. O. C. Trainor, seconded by Dr. C. B. Stewart: THAT the Manitoba Medical Association cannot accept the responsibility for indicating to the hospitals the policy they should adopt with regard to charging for Compensation Cases in Casualty Wards, and

THAT as the motion referred to has been brought to the attention of the doctors by publication in the Manitoba Medical Association "Review," no further notification to the medical men is required, and

THEREFORE, the Executive Committee suggest that the Workmen's Compensation Board should notify the Manitoba Hospital Association of the terms of the Act, and ask for their co-operation in carrying out these terms. —Carried.

Scale of Fees.

The Secretary read the motion passed at a previous meeting, page 0591, and it was moved by Dr. E. L. Ross, seconded by Dr. Geo. Brock: THAT this question be deferred until the next meeting of the Executive.
—Carried.

Permanent Record of Presidency.

The Secretary referred to the discussion at a previous Executive meeting, page 0592, and it was agreed that

this problem be deferred to the next meeting of the Executive.

Financial Statement of Annual Meeting.

A financial statement of the annual meeting was prepared in mimeograph form and distributed to all members present. In the absence of the past treasurer and the new treasurer, the Secretary discussed the details of this statement and pointed out that the greater part of the loss involved had been in connection with the annual dinner and dance, and suggested if the price of the tickets for the dinner had been higher, that this loss would have been avoided.

Unfinished Business.

Examination of Single Men on Farm Employment:

The Secretary reviewed the correspondence in connection with this problem and the minutes referring to it at a previous meeting. He reported that he had received no reply to his last letter from Mr. MacNamara, the Deputy Minister of Public Works.

After considerable discussion it was suggested that it would be advisable for a small Committee to interview Mr. McNamara, as this problem might arise again this year.

Some of the members pointed out that they had examined as many as sixty of these men without receiving remuneration. It was pointed out that most of the cases come from Brandon and the City of Winnipeg and that provision was made for payment in these cities.

It was moved by Dr. O. C. Trainor, seconded by Dr. Geo. Clingan: THAT the President appoint a Committee to interview Mr. MacNamara, Minister of Public Works, in connection with this problem.
—Carried.

The President advised that he would be agreeable to act as one of the members of this delegation and asked Dr. Clingan if he would accompany him. This was arranged.

Hospital Aid Act.

The Secretary reviewed the reference to this in the minute book, page 0540. It was agreed to defer discussion of it until the next meeting of the executive.

Correspondence.

Letter from Academy of Medicine re. Military Medicine: After considerable discussion, in which it was pointed out that this problem had been dealt with at the last executive meeting of the Canadian Medical Association, it was moved by Dr. O. C. Trainor, seconded by Dr. R. E. Dicks: THAT the Secretary be instructed to write to the Academy of Medicine, Toronto, advising them that the Manitoba Medical Association considered that this was properly a problem for the Canadian Medical Association, but that the Manitoba Medical Association would be willing to co-operate in any plan which might be adopted by the Canadian Medical Association. —Carried.

Letter from C.P. & S. of Saskatchewan re. Foreign Graduates: The Secretary read a letter from the Registrar of the College of Physicians and Surgeons of Saskatchewan dealing with the question of foreign doctors and students wishing admission to Canada.

Letters from College of Physicians and Surgeons of Manitoba.

(a) Re. Extra-mural work: The Secretary read a letter from the Registrar of the College of Physicians and Surgeons of Manitoba containing the following resolution: "THAT the College of Physicians and Surgeons of Manitoba grant a sum up to the amount of Three Hundred Dollars ($300.00) to the Manitoba Medical Association for extra - mural post - graduate work for the year 1938-1939."

It was moved by Dr. E. J. Skafel, seconded by Dr. W. S. Peters: THAT this letter be acknowledged with thanks. —Carried.

(b) Re. appointment of representative on Committee of Twelve: The Secretary read a letter from the Registrar of the College of Physicians and Surgeons advising the names of those who had been appointed as members of the Committee of Twelve from the College of Physicians and Surgeons.

Re. Letter from Public Health Supervisor Re. Eye Clinic at Gilbert Plains.

The Secretary read a letter received from the Public Health Supervisor of the Department of Health suggesting that the Parent Teachers Organization would like to have information with regard to holding an eye clinic.

During the discussion it was pointed out that this was really a problem that should be dealt with by the doctors in the area concerned.

It was moved by Dr. Geo. Brock, seconded by Dr. R. E. Dicks: THAT the Secretary be instructed to write to the Parent Teachers Organization suggesting that they discuss this problem with the nearest local doctor.
—Carried.

New Business.

The Secretary pointed out that for several reasons it would be an advantage to arrange the date of the Annual Meeting of the Association now, as this was necessary in order to secure exhibitors for the commercial exhibits, and read a letter received from Dr. D. Nicholson in which he stated that the Scientific Exhibit Committee should be arranged early in order for them to have an opportunity to co-operate with the Committee on the Scientific Programme when arranging the exhibits.

It was moved by Dr. O. C. Trainor, seconded by Dr. Geo. Clingan: THAT the next Annual Meeting of the Manitoba Medical Association be held in September, 1939, and that the officers should appoint forthwith the necessary Committees in connection with this meeting. —Carried.

Milk Depot: The Secretary pointed out that Dr. Gordon Chown had raised the question of an investigation of the Milk Depot during the Annual Meeting. It was decided to defer this problem to the next meeting of the Executive Committee.

Minutes of a Special Meeting of the Winnipeg members of the Executive Committee of the Manitoba Medical Association held in the Medical Arts Club on Saturday, November 12th, 1938, at 12.30 noon.

Present.

Dr. W. E. Campbell Vice-Pres., Chairman	Dr. C. W. Burns
Dr. C. B. Stewart	Dr. E. S. Moorhead
Dr. W. G. Campbell	Dr. S. G. Herbert
Dr. O. C. Trainor	Dr. C. E. Corrigan
	Dr. C. W. MacCharles.

The meeting was called for the purpose of considering a letter received from the General Secretary of the Canadian Medical Association setting out a plan for increasing membership in the Canadian Medical Association in Manitoba.

It was suggested in this letter that the Manitoba Medical Association might pay the expense of sending a copy of the December number of the Canadian Medical Association "Journal" to every practitioner in Manitoba not now a member of the Canadian Medical Association.

It was moved by Dr. C. E. Corrigan, seconded by Dr. S. G. Herbert: THAT we continue to offer the facilities of the Manitoba Medical Association "Review" towards furthering the interests of and increasing the membership in the Canadian Medical Association in Manitoba. —Carried.

It was moved by Dr. S. G. Herbert, seconded by Dr. C. E. Corrigan: THAT the Secretary be instructed to write to the General Secretary of the Canadian Medical

Association advising that the Manitoba Medical Association Executive did not feel able to carry out the programme suggested, and that the Secretary include in his letter the reasons enumerated during the discussion. —Carried.

Further Report by Members on Executive of Canadian Medical Association.

Dr. Trainor stated that at the previous meeting of the Executive Committee of the Manitoba Medical Association, he did not have available the minutes of the meeting of the Canadian Medical Association held at Ottawa on October 27th and 28th, and that these were now available.

He read portions of these minutes dealing with the question of cancer and the federation proposal.

There was a general discussion on both these problems.

The meeting then adjourned.

Membership in Canadian Medical Association

The Canadian Medical Association are publishing in the December number of the Canadian Medical Association "Journal" an article prepared by Dr. T. H. Leggett, Chairman of General Council, and Dr. T. C. Routley, General Secretary, pointing out the reasons why medical men should belong to the Canadian Medical Association. For the information of medical men in Manitoba who do not receive the "Journal" of the Canadian Medical Association, this article has been summarized.

The Canadian Medical Association is as old as Canada, for in 1867, the year of Confederation, a national charter was granted to a small group of practitioners and the Canadian Medical Association was founded. Since that date the Association has held sixty-eight annual scientific meetings in different parts of Canada. In addition, it has sent speakers to the various local Medical Associations. During the period 1926-1932 the Canadian Medical Association sent 2,156 post-graduate speakers to give 4,889 addresses to a total medical attendance of 161,210.

For thirty years the Association has published a monthly journal which is included in the annual membership fee of ten dollars.

The Canadian Medical Association maintains a department of hospital service which hopes to improve the provision for under-graduate and graduate training in the various teaching hospitals and generally improve the facilities of the hospitals throughout Canada.

The Association has attempted to increase the interest of the public in matters of health by the publication of articles in Canadian newspapers.

The Legislative Committee has kept in close touch with developments in both the Dominion and Provincial fields, and has co-operated with the various Departments of Health.

During recent years the Committee on Economics has given constant attention to problems associated with medical economics.

The Committee on Pharmacy has as its duty the problems associated with legislation in the field of therapeutics, the purification of drugs, patent medicines, etc.

For sometime the Committee on Maternal Welfare has been considering the problem of maternal mortality in Canada, and at the last Annual Meeting of the Canadian Medical Association two thousand ($2,000) dollars was granted towards helping to finance the pregnancy survey which is being carried on in Manitoba.

The Canadian Medical Association is responsible for organizing the Royal College of Physicians and Surgeons of Canada, which was developed after ten years of planning. This College will play an increasingly important part in providing standards of post-graduate education and specialization in Canada.

The Canadian Medical Association worked out with the Commissioner of Income Tax an equitable basis for the payment of income tax by doctors throughout Canada.

The Department of Cancer Control has recently been organized, and it is proposed to organize cancer groups in all hospitals with one hundred beds and over. This Department has published a Handbook on Cancer which has been made available to practitioners throughout the country. At the same time the Association arranged for the organization of the National Society for the Control of Cancer, which proposes to carry on a programme of public education similar to that adopted in other countries.

The medical service bureau has helped more than 1,000 doctors looking for locations, locum tenens, etc.

The Committee on Constitution and By-Laws of the Canadian Medical Association has in recent years attempted to improve the relationship between the various Provincial Associations and the Canadian Medical Association, and at the present time all the Provincial Associations in Canada, excepting New Brunswick and Manitoba, have become Divisions of the Canadian Medical Association.

The value of the work done by the Canadian Medical Association has been recognized by various lay organizations, such as the Sun Life Assurance Company of Canada and the Canadian Life Insurance Officers' Association, who have contributed large sums towards its various public activities.

Every year the Association has approximately twenty Committees representing all sections of Canada, who work upon problems of vital importance to the medical profession and to the public.

The Association hopes that every practitioner in Canada will realize that in duty to himself, his profession and the public, he should become a member of the Canadian Medical Association. Applications for membership should be sent on the doctor's own stationery to the Secretary of the Canadian Medical Association, 184 College street, Toronto, accompanied by the annual fee of $10.00. As the Association's year begins in January, it is hoped that those practitioners in Manitoba who have not previously been members of the Canadian Medical Association will join for the year 1939.

On Federation

October 12th, 1938.

The Editor of the Manitoba
Medical Association Review.

Sir:

The debate on federation at the recent annual meeting was admirable in quality and spirit, and at its close the report of the Committee on Federation which recommended that no application be made for admission of the Manitoba Medical Association as a Division of the Canadian Medical Association was carried. The result was not surprising. The report was the work of a committee which had spent much time and thought in deliberation, it was ably and eloquently presented by the Chairman, Dr. F. D. McKenty, and he was supported by Dr. C. M. Strong and by Dr. O. C. Trainor, the newly appointed Manitoba representative on the Executive Committee of the Canadian Medical Association. A contrary vote would have appeared as carrying want of confidence in the Committee and its Chairman who has been consistent throughout in his stand on federation.

It is to be hoped, however, that the matter will not rest here. The recommendation of the Committee not to submit an application was itself tempered with the words, "reluctantly" and "at present." The door was shut but it was not slammed and bolted. At this moment there seems to be no urgency for the Manitoba Medical Association to change from its present status within the Canadian Medical Association as a Branch to that of a Division. Yet at any time an occasion may arise when it would be necessary for the Canadian Medical Association to speak on behalf of the whole medical profession in Canada. Its position would be greatly weakened if it could speak authoritatively for only eight of the nine provinces. One may admit that the present constitution of the Canadian Medical Association presented at the Annual Meeting in Halifax in June is imperfect, but it has been most closely scrutinized by the British Columbia Medical Association and by the Ontario Medical Association, to mention only two, and it has received their approval. Neither Association is easy to satisfy. Anyone who has attempted to draft a constitution will admit the tremendous difficulties in the way. The British Constitution remains unwritten, yet it has moulded public life for centuries. Possibly we should be more concerned with the spirit and less with the letter.

At this time when the need for unity in Canada was never greater, it is to be hoped that the incoming Executive will form a Committee on Federation to carry on negotiations looking to federation. As the world of science should be able to look beyond national boundaries, so there should be no thought in this Dominion of East and West but only of one Canada. Among physicians in this land the emphasis should be placed not on provincial associations, useful as they have been and will continue to be, but on one Canadian body which can speak for all and carry the weight of a united profession.

It has been announced the annual meeting of the Canadian Medical Association will be held in Winnipeg in 1940. The writer hopes that before that time the goal of one united body will be reached and that Manitoba will take her rightful place beside the sister provinces.

ROSS MITCHELL.

Obituary

DR. GEORGE ARLINGTON BROWN

Dr. George Arlington Brown died at Deer Lodge Military Hospital on September 27th, in his 63rd year. He was born in St. Jean Baptiste, Man., educated in Winnipeg schools and graduated from Manitoba Medical College in 1904. From that time till his death he practised in Winnipeg, with the exception of service in the Canadian Army Medical Corps, from which he retired with the rank of Major. Two great motives in his life were music and temperance. He conducted choirs in various Winnipeg churches and was a member of the Royal Templars of Temperance Society.

DR. WILLIAM MOTT

Dr. William Mott, who practised medicine at Rathwell for 35 years, died on October 20th at his home in Winnipeg, after a short illness. Born in England, Dr. Mott came to Canada in 1888. For a time he farmed at Russell, then studied medicine, graduating from Manitoba Medical College in 1906. At Rathwell he rendered valuable service to the community and enjoyed the respect and affection of a wide circle. He was buried in Rathwell cemetery.

Canada Year Book—1938

The publication of the 1938 edition of the Canada Year Book, published by authorization of the Hon. W. D. Euler, Minister of Trade and Commerce, is announced by the Dominion Bureau of Statistics. The Canada Year Book is the official statistical annual of the country and contains a thoroughly up-to-date account of the natural resources of the Dominion and their development, the history of the country, its institutions, its demography, the different branches of production, trade, transportation, finance, education, etc.—in brief, a comprehensive study within the limits of a single volume of the social and economic condition of the Dominion. This new edition has been thoroughly revised throughout and includes in all its chapters the latest information available up to the date of going to press.

There are over thirty maps and charts contained in the volume, and two photo-gelatine inserts illustrating the sections on "The Flora of Canada" and "Historic Sites and Monuments", respectively. Three lithographed maps are included.

Persons requiring the Year Book may obtain it from the King's Printer, Ottawa, as long as the supply lasts, at the price of $1.50, which covers merely the cost of paper, printing and binding. By a special concession, a limited number of paper-bound copies have been set aside for ministers of religion, bona fide students and school teachers, who may obtain copies at the nominal price of 50 cents each.

Australian Medical Congress

The Sixth Australasian Medical Congress will meet in Perth, Western Australia, at the end of August, 1940.

The main subject to be discussed will be "Rheumatic and Allied Disorders."

An invitation has been received for members of the Canadian Medical Association to attend this meeting.

Department of Health and Public Welfare

NEWS ITEMS

RADIO PROGRAMME 1938-1939. During the past few years your Department of Health and Public Welfare have been preparing and delivering over Broadcasting Station CKY a number of short health talks. This year "Just Children" is the title of the ninth year's radio programme of the Department of Health and Public Welfare as a series of weekly talks commencing November 17th, 1938, at 4.45 p.m., to 4.55 p.m., and continuing each Thursday until June 8th, 1939.

The purpose of this programme is to emphasize various factors that influence child growth and development and to make known to parents and all others entrusted with the care of children or interested in their needs—those facilities that exist to promote the well being of children.

An outline of the broadcasts is as follows:—

1938—

Nov. 17—Introduction and discussion of subject from the viewpoint of the Minister of Health and Public Welfare in administrating health and welfare services.

Nov. 24—Relation of vital statistics to child health and well being.

Dec. 1, 8, 15—What the family doctor can do to conserve child health during infancy, and the pre-school and school periods.

Dec. 22—Special problems of child health.

Dec. 29—The purpose and work of health departments to safeguard and promote the health of the child.

1939—

Jan. 5—The purpose and work of health departments to safeguard and promote the health of the child.

Jan. 12—The work of public health nurses in infant, pre-school and school nursing.

Jan. 19—The importance of dental care in childhood.

Jan. 26—Food and nutrition requirements of the child.

Feb. 2—Safeguarding the food supply of children.

Feb. 9—Environmental requirements for child growth and development.

Feb. 16, 23 and March 2, 9—Developing personalities: physiological, social and selfhood needs; education and personality needs.

March 16—Safeguarding and promoting the mental health of the child—special problems.

March 23, 30 and April 6—Child care and guidance from the point of view of parents—how the Parent Education Association helps parents.

April 13—Educational needs of children.

April 20—Educational requirements and facilities for handicapped children.

April 27—Spiritual needs of the child for growth and development.

May 4—Recreational needs and facilities for girls.

May 11—Recreational needs and facilities for boys.

May 18—Care of bereaved and dependent children.

May 25—Fitting the adopted child into the right home.

June 1—Child care and protection—how child welfare agencies safeguard needy and neglected children.

June 8—Summary of main points in the series concerning parental, health, educational and recreational needs of the child in the world of today.

We would also like to quote herewith an article entitled "The Prevention of Tuberculosis in Early Infancy" by Morris Steiner, M.D., and which was recently published in a publication called "Preventive Medicine":—

THE PREVENTION OF TUBERCULOSIS IN EARLY INFANCY

"The general death rate from tuberculosis has declined considerably in the past twenty-five years. This is due to advances in the diagnosis of tuberculosis, anti-tuberculosis campaigns and public health clinics. This decline in death rate, however, has not been equally distributed over all decades of life. According to Stewart, during the ten year period ending in 1927, the death rate dropped 63 per cent. for children under five years of age. In spite of this gratifying fall in the death rate among young children, the tuberculosis mortality still remains higher in infants under one year of age than at any other period of childhood. Whether the increased susceptibility in infants is due to an inherent lack of resistance or to massive or repeated infections is a moot question. In the experimental production of tuberculosis in animals, the amount of disease produced is directly proportional to the size of the infecting dose of the organism; and, if this experimental work can be applied to human beings, it is reasonable to assume that, because of the intimate contact required in the care of a baby, the latter explanation is the logical one.

"There are two main sources of infection during infancy; the first is through the respiratory tract from infected human beings, usually a parent, nurse or relative. The second source of infection, which is the oral route, has been in the main eliminated by the pasteurization and boiling of milk. Ritual circumcision as a source of local infection in newborn infants deserves some mention as occasional reports of this type of infection are still mentioned in the literature. The problem in the prevention of tuberculosis in early infancy, therefore, resolves itself into the prevention of contact infection from human beings. As mentioned before, infection in infancy occurs as a result of contact with tuberculous parents, grandparents or baby nurses; less intimate contacts include visitors and relatives suffering from open tuberculosis.

"The prevention of contact infection from the mother requires careful ante-partum examination of the expectant mother by the obstetrician. Segregation and isolation of the newborn infant from the tuberculous mother are essential.

"A suspicious history in the father, such as hemoptysis or pleurisy with effusion warrants a careful physical examination to rule out or establish a diagnosis of tuberculosis. The parent should be isolated from the infant until tuberculosis is excluded by all the methods at our disposal.

"A not uncommon source of infection is a grandparent who is said to have "chronic bronchitis" or "asthma," when in reality he is suffering from chronic fibroid phthisis or tuberculous tracheobronchitis. Here again careful sputum and roentgenologic examination should be made to rule out tuberculosis.

"Among the wealthier class of patients, infection may occur from nursemaids who have not been examined for tuberculosis. Too late, infants have been brought to the pediatrician for examination, upon the appearance of sudden hemoptysis in the nursemaids, or because of a chance discovery that the maid or some other family servant is being treated for a lung condition. Food handlers in this state are required to undergo a physical examination to rule out venereal and tuberculous infection, which is as it should be; but no examination is required of baby nurses. Tuber-

culosis is certainly more likely to develop from contact with a person suffering from the disease than from a casual infection of food contaminated by a tuberculous food handler. The mother should be instructed by the pediatrician to insist upon a thorough physical examination of the person she is about to employ to care for her child. The slightest suspicion of tuberculous infection should exclude the individual as a fit person for the care of any infant.

"The Board of Health of New York City provides facilities for the diagnosis of tuberculosis for patients who cannot afford to be examined by a private physician. Free sputum and roentgenographic examination may be had for all suspected cases. The practitioner should avail himself of this service at every opportunity.

"Acquired immunity by vaccination with the attenuated bovine bacillus of Calmette and Guerin (B.C.G.), is still in the experimental stage and requires more critical analysis before it can be accepted and recommended as a thoroughly reliable means of increasing resistance to tuberculous infection. Several weeks after vaccination with B.C.G., the child develops allergy as indicated by the appearance of a positive tuberculin reaction. Whether this allergy is a beneficial or a detrimental phenomenon to the child, should secondary infection occur, is a question which has been raised by Stewart. The introduction also, of living tubercle bacilli, though non-virulent for laboratory animals is another matter for serious consideration. The use of vaccines containing dead tubercle bacilli disposes of any misgivings that avirulent organisms may under certain circumstances become virulent, but such vaccines are still in the experimental stage. As pointed out by Goodwin and Schwentker there is real danger in creating in the members of a tuberculous household a false sense of security for the vaccinated child, so that the usual precautions of isolation may be disregarded. At the present state of our knowledge it is best to avoid the introduction of tubercle bacilli or tuberculous material of any kind.

"That such measures as education of the tuberculous subject, intelligently applied, will suffice to protect infants and children from infection, is shown by the fact that infants born of tuberculous physicians in sanatoria often escape infection for many years. When this cannot be done, however, isolation of the infant from the contact case still remains of paramount importance.

COMMUNICABLE DISEASES REPORTED
Urban and Rural - October, 1938.

Occurring in the Municipalities of:

Scarlet Fever: Total 155—Winnipeg 60, Portage City 16, Flin Flon 8, St. Boniface 8, St. Vital 8, Portage Rural 7, Selkirk 6, St. James 5, St. Andrews 4, Unorganized 4, La Broquerie 3, Bifrost 2, Brandon 2, Hanover 2, Kildonan East 2, Morton 2, Assiniboia 1, Brokenhead 1, Brooklands 1, Brenda 1, Hillsburg 1, Kildonan West 1, Lac du Bonnet 1, Lorne 1, Ritchot 1, Rockwood 1, Siglunes 1, St. Clements 1, St. Paul East 1, The Pas 1, Transcona 1 (Late Reported: September, East Kildonan 1).

Chickenpox: Total 127—Winnipeg 73, Rockwood 9, St. James 7, Blanshard 6, Dauphin Town 5, Unorganized 4, St. Francois 3, Arthur 2, Flin Flon 2, Franklin 2, Selkirk 2, St. Boniface 2, Brandon 1, De Salaberry 1, Kildonan East 1, Kildonan Old 1, Kildonan West 1, Piney 1, Pipestone 1, Shell River 1 (Late Reported: March, Unorganized 1; September, Dauphin Town 1).

Measles: Total 49—Lorne 34, Strathcona 6, Brandon 3, Flin Flon 2, La Broquerie 1, Piney 1, Portage Rural 1, Winnipeg 1.

Mumps: Total 45—Winnipeg 38, Brandon 5, Portage City 2.

Tuberculosis: Total 40—Winnipeg 17, Unorganized 8, Brandon 2, Assiniboia 1, Cameron 1, Eriksdale 1, Fort Garry 1, Franklin 1, Hanover 1, Lac du Bonnet 1, MacDonald 1, Portage Rural 1, Selkirk 1, Strathcona 1, St. Boniface 1, St. James 1.

Whooping Cough: Total 39—Unorganized 13, Winnipeg 11, Lawrence 7, Daly 4, Brandon 2, Melita 1, St. James 1.

Anterior Poliomyelitis: Total 32 — Winnipeg 11, Arthur 2, Birtle Rural 2, Louise 2, Strathcona 2, De Salaberry 1, Franklin 1, Lorne 1, Montcalm 1, Morris Rural 1, Rhineland 1, Swan River Rural 1, St. Andrews 1, Transcona 1, Victoria 1 (Late Reported: September, Dauphin Rural 1, Strathcona 1, Unorganized 1).

Diphtheria: Total 30—Winnipeg 18, Hanover 7, Flin Flon 1, Rosedale 1, St. Boniface 1, St. Vital 1, Tache 1.

Encephalitis: Total 16—Winnipeg 1 (Late Reported: August, Russell Rural 1; September, Russell Rural 6, Russell Town 6, Shellmouth 1, Shoal Lake 1).

Typhoid Fever: Total 13—Tache 9, Ste. Anne 2, Gimli Rural 1, Hanover 1.

Erysipelas: Total 7—Winnipeg 3, Brandon 1, St. Boniface 1, St. James 1, Woodlands 1.

Influenza: Total 2—(Late Reported: July, Miniota 1; August, Louise 1).

Cerebrospinal Meningitis: Total 1—Morris Rural 1.

Lethargic Encephalitis: Total 1—Winnipeg 1.

German Measles: Total 1—Unorganized 1.

Venereal Disease: Total 153 — Gonorrhoea 111, Syphilis 42.

DEATHS FROM ALL CAUSES IN MANITOBA
For the Month of September, 1938.

URBAN—Cancer 46, Pneumonia 9, Tuberculosis 6, Syphilis 5, Infantile Paralysis 2, Influenza 2, Diphtheria 1, all others under one year 22, all other causes 128, Stillbirths 23. Total 244.

RURAL—Cancer 31, Tuberculosis 18, Pneumonia 15, Syphilis 2, Diphtheria 1, Infantile Paralysis 1, Influenza 1, Tetanus 1, Typhoid Fever 1, all others under one year 48, all other causes 152, Stillbirths 6. Total 277.

INDIAN—Tuberculosis 11, Pneumonia 3, Whooping Cough 3, all others under one year 2, all other causes 5, Stillbirths 1. Total 25.